



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

mf

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/811,164

03/26/2004

Steve Beaudin

7000-323

2009

27820 7590 03/30/2007  
WITHROW & TERRANOVA, P.L.L.C.  
100 REGENCY FOREST DRIVE  
SUITE 160  
CARY, NC 27518

EXAMINER

WENDELL, ANDREW

ART UNIT

PAPER NUMBER

2618

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

03/30/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/811,164	<b>Applicant(s)</b> BEAUDIN ET AL.	
	<b>Examiner</b> Andrew Wendell	<b>Art Unit</b> 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-7, 11-13, 16-18, 21-22, and 26-28 is/are rejected.
- 7) ☒ Claim(s) 4,5,8-10,14,15,19,20,23-25,29 and 30 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 6-7, 11-13, 16-18, 21-22, 26-28, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuerter (US Pat# 6,125,109) in view of Katz (US Pat# 7,069,051) and further in view of Yamamoto (US Pat Pub# 2003/0148747).

Regarding claim 1, method claim 1 is rejected for the same reason as apparatus claim 16 since the recited elements would perform the claimed steps.

Regarding claim 2, method claim 2 is rejected for the same reason as apparatus claim 17 since the recited elements would perform the claimed steps.

Regarding claim 3, method claim 3 is rejected for the same reason as apparatus claim 18 since the recited elements would perform the claimed steps.

Regarding claim 6, method claim 6 is rejected for the same reason as apparatus claim 21 since the recited elements would perform the claimed steps.

Regarding claim 7, method claim 7 is rejected for the same reason as apparatus claim 22 since the recited elements would perform the claimed steps.

Regarding claim 11, method claim 11 is rejected for the same reason as apparatus claim 26 since the recited elements would perform the claimed steps.

Regarding claim 12, method claim 12 is rejected for the same reason as apparatus claim 27 since the recited elements would perform the claimed steps.

Regarding claim 13, method claim 13 is rejected for the same reason as apparatus claim 28 since the recited elements would perform the claimed steps.

Regarding claim 16, Fuerter's delay combiner system for CDMA teaches a) a first input 32 (Fig. 2) adapted to receive a first receive signal centered about a first center frequency from a first antenna 16a (Fig. 2); b) a second input 32 (Fig. 2) adapted to receive a second receive signal centered about the first center frequency from a second antenna 16n (Fig. 2); c) first translation circuitry 36 (Demodulators, Fig. 2) adapted to translate the first receive signal from the first antenna to being centered about a second center frequency; and d) combining circuitry 38 (Fig. 2) adapted to combine the first receive signal 16a (Fig. 2) centered about the second center frequency and the second receive signal 16n (Fig. 2) to form a composite signal 40 (Fig. 2), which is sent to base housing electronics over a feeder cable 44 (Fig. 2). Fuerter fails to teach a first translation circuitry and a base housing over a feeder cable.

Fuerter teaches demodulators 36 (Fig. 2) which could translate the signal but it is unclear about the details of the demodulator. Katz's data transmission system teaches a) a first input 111 (Fig. 2) adapted to receive a first receive signal centered about a first center frequency from a first antenna 140 (Fig. 2); b) a second input 111 (Fig. 2) adapted to receive a second receive signal centered about the first center frequency from a second antenna 141 (Fig. 2); c) first translation circuitry 112 and 113 (Fig. 2, going from RF signal to an IF signal broadband to narrowband) adapted to translate

Art Unit: 2618

the first receive signal from the first antenna to being centered about a second center frequency (Col. 4 lines 58-63).

Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art at the time the invention was made to incorporate a first translation circuitry as taught by Katz into Fuerter's delay combiner system for CDMA in order to improve efficiency (Col. 2 lines 19-27).

Both Fuerter and Katz fail to teach a base housing over a feeder cable.

Yamamoto's radio base station teaches a composite signal which is sent to base housing 14 (Fig. 3) electronics over a feeder cable 13 (Fig. 3).

Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art at the time the invention was made to incorporate a base housing over a feeder cable as taught by Yamamoto into a first translation circuitry as taught by Katz into Fuerter's delay combiner system for CDMA in order to minimize error of a received signal (Sections 0035-0037).

Regarding claim 17, Fuerter further teaches wherein the first receive signal 16a (Fig. 2) centered about the second center frequency is combined 38 (Fig. 2) with the second receive signal 16n (Fig. 2) centered about the first center frequency to form the composite signal (Fig. 2).

Regarding claim 18, Fuerter further teaches wherein the first center frequency and the second center frequency are sufficiently spread to minimize interference 36 (Rake Fingers, Fig. 2) between the first 16a (Fig. 2) and second 16n (Fig. 2) receive signals in the composite signal.

Regarding claim 21, Fuerter further teaches wherein the second antenna is a main antenna also used to transmit signals centered about the first center frequency, and the first antenna is a diversity antenna associated with the second antenna, the base station electronics further comprising circuitry adapted to transmit a transmit signal via the main antenna (Fig. 7).

Regarding claim 22, Katz further teaches wherein a plurality of receive signals, including the second receive signal 141 (Fig. 2), are received and translated 112 and 113 (Fig. 2, going from RF signal to an IF signal and broadband to narrowband) to being centered about different center frequencies (can vary IF signal through the oscillator and mixer).

Regarding claim 26, Fuerter further teaches wherein the first and second receive signals correspond to a cellular signal transmitted from a cellular communication device (Col. 2 lines 50-51).

Regarding claim 27, Fuerter further teaches wherein the first and second antennas are associated with one of a plurality of sectors for the base station environment 39 (Fig. 2).

Regarding claim 28, Yamamoto further teaches wherein each sector uses one feeder cable 13 (Fig. 3) between the masthead 12 (Fig. 3) and the base housing 14 (Fig. 3).

Regarding claim 31, system claim 31 is rejected for the same reason as apparatus claim 16 since the recited elements would perform the claimed steps.

***Allowable Subject Matter***

3. Claims 4-5, 8-10, 14-15, 19-20, 23-25, and 29-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant's Remarks	Examiner's Response
Regarding claims 1, 16, and 31, "Katz does not disclose or suggest translating a first receive signal to being centered about a second center frequency where a second receive signal is centered about a frequency different from the second center frequency."	Katz teaches translating a first receive signal to being centered about a second center frequency. The first receive signal is an RF signal. Then the RF signal is put through the translators 112 and 113 (Fig. 2), the RF signal gets centered to an IF signal which has a second center frequency. The claim limitations does not mention a second receive signal being centered about a frequency different from the second center frequency. Examiner believes applicant is reading more into the claims than presently claimed.
Regarding claim 3 and 18, "While the rake fingers 36 track and demodulate a single path 12, the rake fingers 36 do not provide	There are two signal paths because there is at least two different antennas 16a and 16n (Fig. 2). Each path from the two

<p>a first center frequency and a second center frequency where the respective frequencies are spread to minimize interference between the first and second receive signals in the composite signal.”</p>	<p>antennas gets demodulated 36 (Fig. 2), which means that there is a first center frequency and a second center frequency (not clearly explained in the reference, hence Katz was used to demonstrate that more clearly in claim 1). The rake fingers 36 (Fig. 2) minimize interference. Given the broadest reasonable interpretation of the claim, examiner believes Fuerter reference reads on the claim limitations.</p>
<p>Regarding claim 7 and 22, “The Applicants submit that neither Fuerter nor Yamamoto, either singularly or in combination, disclose or suggest receiving a plurality of receive signals, translating them to being centered about different frequencies, and combining them to form a composite signal.”</p>	<p>In response to applicant’s arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See <i>In re Keller</i>, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); <i>In re Merck &amp; Co.</i>, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Katz teaches this limitation, see above response.</p>
<p>Regarding claims 4 and 19, “Similarly,</p>	<p>Examiner agrees with applicant and claims</p>



Millman does not disclose or suggest a third frequency."	4-5 and 19-20 are objected.
Regarding claims 14 and 29, "Similarly, Millman does not disclose or suggest a fourth center frequency."	Examiner agrees with applicant and claims 14-15 and 29-30 are objected.
Regarding claims 8 and 23, "The Applicants submit that none of the references, either singularly or in combination, disclose or suggest separating first and second receive signals from a composite signal."	Examiner agrees with applicant and claims 8-10 and 23-25 are objected.
Regarding claims 10 and 25, "As previously detailed, neither Fuerter, Katz, Yamamoto, nor Millman, either singularly or in combination, disclose or suggest a third frequency nor combining a second receive signal with a first receive signal to form a composite signal."	Examiner agrees with applicant and claims 10 and 25 are objected.

***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Wendell whose telephone number is 571-272-0557. The examiner can normally be reached on 7:30-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 571-272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2618

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Andrew Wendell  
Examiner  
Art Unit 2618

3/22/2007

  
**NAY MAUNG**  
**SUPERVISORY PATENT EXAMINER**